NORTH DAKOTA
DEPARTMENT *of* HEALTH

MAY 4, 2006

HEALTH ALERT NETWORK

HEALTH UPDATE

Please note: This Health Update was originally distributed April 21, 2006, but is being resent to clarify information about adult immunity to mumps. Please see the highlighted paragraph.

This health update provides additional information regarding the mumps outbreak in the central states as well as diagnostic and prevention information for mumps.

As of April 20, 2006, Iowa has reported 975 confirmed, probable and suspect cases of mumps. Other states – including Nebraska, Kansas, Illinois, Indiana and Minnesota – also have reported cases. North Dakota has had one case of mumps reported in 2006. This case has not been epidemiologically linked to the Iowa outbreak.

Report all cases of mumps to the North Dakota Department of Health by calling 800.472.2180.

Mumps Prevention

Vaccination Recommendations for the General Public:
Two doses of measles, mumps and rubella (MMR) vaccine are recommended for all children. The first dose of MMR vaccine typically is given at 12 to 15 months of age, and the second dose at 4 to 6 years of age. Children attending day cares in North Dakota are required to be age-appropriately immunized against mumps. Two doses of MMR are required for all children attending schools or colleges in North Dakota. Parents are encouraged to check their child's immunization record or contact their child's health-care provider or local public health unit to ensure their child's vaccinations are up-to-date. At this time there is no recommendation to change the immunization schedule. Any changes to the immunization schedule will be based on the epidemiology of reported cases.

Adults born before 1957 are considered immune to mumps. Adults born in and after 1957 should be vaccinated with at least one dose of mumps-containing vaccine.

Mumps Recommendations for Health-Care Workers:
Vaccination with mumps virus vaccine is recommended, unless otherwise contraindicated, for all health-care workers who are susceptible to mumps. Combined MMR is the vaccine of choice, especially when the recipient also is likely to be susceptible to measles, rubella, or both.

Health-care workers should be considered immune to mumps if they have (a) documentation of physician-diagnosed mumps, (b) documentation of receipt of one dose of live mumps vaccine on or after their first birthday, or (c) serologic evidence of immunity.

a. Administer mumps vaccine to all personnel without documented evidence of mumps immunity, unless otherwise contraindicated.

b. Before vaccinating personnel with mumps vaccine, do not routinely perform serologic screening for mumps, unless the health-care employer considers screening cost-effective or it is requested by the potential vaccinee.
c. Exclude from duty susceptible personnel who are exposed to mumps from the 12th day after the first exposure through the 26th day after the last exposure or, if symptoms develop, until nine days after the onset of parotitis.

During an outbreak, two doses of mumps-containing vaccine should be considered for all health-care providers without documented physician-diagnosed disease or serologic evidence of immunity. At this time, North Dakota is NOT experiencing an outbreak of mumps.

Mumps Laboratory Testing

Physicians should consider mumps when evaluating patients with an acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland lasting more than two days without other apparent cause. Mumps should not be ruled out in someone who has symptoms clinically consistent with the disease, based solely on the person having a vaccination history with MMR vaccine. **People suspected to have mumps should be isolated until nine days after the onset of parotitis or until mumps has been ruled out.**

Asymptomatic people should not be tested for mumps. The North Dakota Department of Health (NDDoH) will not be investigating laboratory-confirmed cases that do not have symptoms.

The NDDoH recommends collecting viral specimens, as well as serologic specimens for mumps testing.

Serology

IgM: Mumps is confirmed using mumps IgM antibody testing of serum samples collected as soon as possible after symptom onset for IgM testing. A positive IgM test result indicates current/very recent infection. As with any lab test, there can be false-positive test results. If the suspected case has received one or more doses of MMR, the IgM response may be missing, delayed or transient.

IgG: IgG alone is not diagnostic unless you obtain both an acute (can be done as soon after onset as the patient is seen, but ideally four to five days after onset of symptoms) and convalescent (from two to four weeks after onset) blood specimen for serologic tests to determine if a four-fold rise in IgG antibody titer has occurred (e.g., from 1:40 to 1:320).

The cost for mumps virus antibody testing from the NDDoH Division of Microbiology is **$25**.

Virus detection (Direct RT- PCR or virus isolation with sequence analysis):

Mumps virus may be isolated in cell culture or mumps viral RNA may be detected by RT-PCR from clinical samples prior to onset of parotitis until five to nine days after parotitis (one to four days is optimal for virus collection). Among previously immunized suspected cases, mumps virus detection is an important method of confirming the case.

Sequence analysis of a RT-PCR product derived from a virus isolate or from clinical material confirms the presumptive-positive PCR results and provides epidemiologically important information. **The NDDoH Division of Microbiology forwards mumps isolates to the U.S. Centers for Disease Control and Prevention for RT-PCR.**

Clinical specimens (oral fluid or urine) should be obtained as close to symptom onset as possible for virus detection by isolation in cell culture or RT-PCR. A parotid gland/buccal swab is the preferred specimen.

Collect buccal swab, throat swab, or urine samples up to nine days after symptom onset. Keep samples cold (4C) or frozen (-70C). Bulk urine should be kept cold (4C). Upon receipt at a facility equipped to centrifuge the sample, the urine is centrifuged at 4C for 10 minutes at 400 x g, recovering the sediment in 2-3 ml of sterile cell culture fluid or VTM. The urine sediment can be frozen at -70C or held at 4C until shipment. Ship specimens using ice packs or dry ice. Avoid freeze-thaw cycles.

- **Parotid Gland/Buccal swab** may provide the best viral sample. Massage the parotid gland area (the space between the cheek and teeth just below the ear) for about 30 seconds prior to collection of the buccal secretions. The parotid duct (Stensen's duct) drains in this space near the upper rear molars. A throat swab (oropharyngeal or nasopharyngeal swab) can also be collected and added together with the buccal swab. Place swab in a tube containing 2-3 mls of viral transport medium or other sterile isotonic solution (phosphate buffered saline or cell culture medium).
- **Urine:** Collect 5-10 mls from clean-catch urine and store in a screw-top, sterile container, preferably a 15 ml centrifuge tube.

There will be no charge for mumps viral cultures, as the NDDoH is requesting that they be done for epidemiologic purposes.

The NDDoH requests that the patient data portion of the laboratory test request form be completely filled out, as onset and immunization history may affect the results of the laboratory test. A laboratory test request form is available at www.health.state.nd.us/disease/Immunization/Documents/LaboratoryTestRequestForm.pdf.

Specimens should be sent to:
North Dakota Department of Health Division of Microbiology
Box 5520
Bismarck, ND 58506-5520

Please contact the NDDoH Division of Microbiology at 701.328.6272 regarding any questions about mumps laboratory testing.

Categories of Health Alert messages:

- *Health Alert conveys the highest level of importance; warrants immediate action or attention.*
- *Health Advisory provides important information for a specific incident or situation; may not require immediate action.*
- *Health Update provides updated information regarding an incident or situation; no immediate action necessary.*
- *Health Information provides general information that is not necessarily considered to be of an emergent nature.*

This message is being sent to local public health units, clinics, hospitals, physicians, tribal health, North Dakota Nurses Association, North Dakota Long Term Care Association, North Dakota Healthcare Association, North Dakota Medical Association, North Dakota EMS Association and hospital public information officers.